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IMPORTANT 1954 FOREST INSECT OUTBREAKS
CALIFORNIA REGION

The California region has experienced moderate to heavy outbreaks of several forest insects this past year. The three most important such outbreaks are: (1) the Douglas-fir beetle, currently epidemic in Douglas-fir stands of the North Coast and now causing heavy losses in old-growth stands; (2) the lodgepole needle miner-mountain pine beetle complex in Yosemite National Park, which is creating another ghost forest in the high country lodgepole pine; and (3) the fir engraver beetle, which is causing heavy scattered losses throughout the Sierras. Other less serious outbreaks include the California flatheaded borer in Jeffrey pine in southern California, the damage to cones and seeds of sugar pine and Douglas-fir by several insects, and the Jeffrey pine beetle-caused losses to Jeffrey pine on the Inyo National Forest.

Douglas-fir beetle, Dendroctonus pseudotsugae Hopk.

Host - Douglas-fir.

Principal use of host - Commercial timber.

Type of damage - Group killing due to cambium-feeding.

Extent of damage - 200,000 acres in the Klamath and Trinity River drainages of northwestern California. Estimate 100 million board feet loss with a present stumpage value of $500,000.

History of outbreak - The present infestation is believed to be due to a heavy blowdown during the winter of 1951-52. The beetles breed in the downed timber and have since progressed to nearby standing trees.

Trend - Recent surveys indicate that beetle populations have increased over last year with no immediate decrease in populations foreseen.

Control measures - Steps are currently being taken to shift logging operations into areas of heavy loss in an attempt to salvage as much of the beetle-killed timber as possible.

Lodgepole needle miner, Recurvaria milleri Busck.

Host - Lodgepole pine.

Principal use of host - Watershed and high recreational values in Yosemite and Sequoia-Kings Canyon National Parks.

Type of damage - Heavy defoliation caused by the mining of the needles.

Extent of damage - 46,000 acres in Yosemite National Park and about 3,000 acres in Sequoia-Kings Canyon National Parks. Although the needle miner is capable of causing outright tree mortality, this seldom happens because of the rapidity with which these weakened trees are attacked and killed by the mountain pine beetle.

History of outbreak - This insect has periodically defoliated lodgepole pine in portions of these Parks with subsequent heavy losses due to the mountain pine beetle. The current outbreak is believed to have started in 1945 and has been on the increase since that time.

Trend - Populations remain at the same high level as last year.

Control measures - The experimental spraying of 11,000 acres with DDT last year has proven to be ineffective. Tests with several insecticides this past season show promise.

Mountain pine beetle, Dendroctonus monticolae Hopk.

Host - Lodgepole pine.

Principal use of host - Watershed and aesthetic values in high country recreational area of Yosemite National Park.

Type of damage - Tree killing due to cambium-feeding.

Extent of damage - Estimate currently-infested trees at 7,000 on 2,000 acres.

History of outbreak - In the past, extensive ghost forests have occurred as a result of mountain pine beetle activity following severe defoliation by the lodgepole needle miner. The present mountain pine beetle-caused losses probably date back to 1952.

Trend - Losses have increased rapidly this past year and it appears that the stands under attack will soon be relegated to ghost forests.

Control measures - Control was undertaken over part of this area last spring when some 1,600 trees were treated. However, this was an incomplete treatment of the area. Control has again been recommended for this year, but turned down by the Park Service for administrative reasons.

California flatheaded borer, Melanophila californica Van Dyke.

Host - Principally Jeffrey pine, but does attack and kill several other pines.

Principal use of host - In southern California, where these outbreaks are occurring, the principal uses are watershed protection and recreation.

Type of damage - Tree killing by cambium-feeding.

Extent of damage - This loss is occurring over several areas which, together, total approximately 25,000 acres. Loss figures for this year are not available; however, the loss appears about the same as last year when a survey over 7,500 acres revealed 5,775 trees killed.

History of outbreak - This insect species has been responsible for heavy losses in these areas for over thirty years. Losses have been particularly severe the last three years.

Trend - Maintaining a high population level with attendant high losses. No apparent decrease in losses this year over last, except in the few areas where control is under way.

Control measures - Where feasible, sanitation-salvage logging is being undertaken. Direct control with ethylene dibromide and diesel fuel has been attempted in two small areas, with success.

Sugar pine cone beetle, Conophthorus lambertianae Hopk.

Host - Sugar pine.

Principal use of the host - Commercial timber.

Type of damage - Feed on and destroy the cones and seeds.

Extent of damage - Known to be occurring throughout the range of the host in the Sierra and Coast Range of California. Damage to the seed crop is somewhat spotty, varying with little damage in some areas to very serious damage in others. Statewide, it is estimated that 75 per cent of the 1954 seed crop has been destroyed.

History of outbreak - Little is known concerning past damage by this insect.

Trend - Unknown.

Control measures - A small area was sprayed with DDT by helicopter in the late spring of 1953. This aerial application appears to have reduced damage considerably, but further experimental work is needed.

Douglas-fir cone and seed insects.

Host - Douglas-fir.

Principal use of the host - Commercial timber.

Type of damage - Damage to all parts of the cones and seeds by a variety of insects.

Extent of damage - The most serious losses are occurring in the northern Sierras and throughout the North Coast. Preliminary sampling of these areas shows losses to range from 53 to 98 per cent.

History of outbreak - As with the sugar pine cone beetle, little is known concerning these insects and the past damage caused by them.

Trend - Unknown.

Control measures - No control has been attempted and none is known.

Jeffrey pine beetle, Dendroctonus jeffreyi Hopk.

Host - Jeffrey pine.

Principal use of the host - Watershed and aesthetic value.

Type of damage - Scattered tree killing.

Extent of damage - An appraisal survey of this area in July of this year indicated a loss in virgin stands of 254 board feet per acre on about 3,000 acres.

History of outbreak - This outbreak has been in progress for at least the last two years, with losses increasing each year.

Trend - Appears to be increasing in some areas but remaining at the same relatively high level over most of the infestation.

Control measures - Some adjacent areas have been logged, removing the high risk trees. This has resulted in a tremendous decrease in losses. The present loss on high risk cut lands is 14 board feet per acre, as opposed to 254 board feet per acre on the virgin areas.

The western pine beetle Dendroctonus brevicomis Lec. and the pine engraver beetle Ips sp. show evidence of increasing damage over that of the low level of the past season, particularly in the Sierra foothill area.

Submitted by:

California Forest and Range Experiment Station
Box 245
Berkeley 1, California